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maximum in the Carboniferous. The *Cycadaceæ* may have originated as early as the Devonian. They must have attained their absolute as well as their relative maximum development in the middle Jurassic. The *Coniferae* through their archaic form, the *Cordaiteæ*, began in the Lower Silurian. They attained their full maturity in the Cretaceous, and are now on the decline. The Monocotyledons probably date back to the Lower Carboniferous or Devonian, and reached their highest expression in the palms whose reign occupied the early Tertiary. These also are probably now waning. The Dicotyledons must have had their real origin in the Lower Jura or Upper Trias; their absolute probably coincides with their relative development, the *Apetalæ* being now declining, the *Polypetalæ* about stationary, and the *Gamopetalæ* rapidly advancing.

GENERAL NOTES.

Results of the Philadelphia Meeting.—It is unnecessary to mention those features which are obvious from the nature of the meeting and the large attendance of botanists. Not among the least results was the awakening to united action, which must be still further augmented in order to forward measures of commanding importance which are quite within the scope of the organization.

The action in reference to postage on botanical specimens seems to have been as vigorous and effective as could have been devised. The committee of the Club did their work well. The resolutions drawn up and presented by the officers of the Club to the Biological Section of the Association were as follows:

Resolved, 1st. That the Biological Section of the American Association for the Advancement of Science earnestly request that the Postmaster General recommend to Congress such changes in the existing postal laws as will permit the transmission through the mails of botanical specimens, accompanied with the customary written labels, giving name, locality, date of collection and collector's name, at fourth-class rates of postage.

Resolved, 2d. That he take such action as may be deemed best to secure similar regulations in the transmission of botanical specimens to and from Canada.

Resolved, 3d. That he cause the same subject to be presented before the Congress of the Universal Postal Union at its meeting in Lisbon in October next, in order, if possible, to secure like liberality with foreign countries.

The secretary of the Section was instructed to transmit the same to the Postmaster General. Upon the suggestion of the vice-president, Prof. Cope, a motion was carried to have a committee appointed to wait upon the Postmaster General, and personally urge the importance of the measures. The

chair appointed Prof. Ward, of the National Museum, Dr. Vasey, of the Department of Agriculture, and Prof. Chickering, of the Deaf-Mute College.

The desirability of calling attention to the necessity of more extensive investigations on plant diseases, from both an economical and scientific view, was the topic of much conversation, but it did not till the last days of the session crystallize into definite shape. The following was finally presented to the Section of Biology: The members of the Botanical Club desire to call the attention of the American Association to the necessity of encouraging researches upon the influences which affect the health of plants, particularly those of fungous origin, and therefore pray that the Biological Section request that a permanent committee be appointed, to be known as a "Committee on the Encouragement of Researches upon the Health and Diseases of Plants," to confer with regard to the best methods by which to advance this object, the first report to be made to the Society at its next meeting. Seven names were suggested for members of this committee. This received the hearty sanction of the Section, and was sent to the Standing Committee, and from them to the General Session of the Association, which established the committee and appointed the following members: J. C. Arthur, C. E. Bessey, W. G. Farlow, T. J. Burrill, J. T. Rothrock, C. H. Peck and W. J. Beal. The marked favor with which the matter was received by members of the Association, both officially and privately, gives much encouragement that important results will be accomplished.

In opposition to these commendatory results, a few failures, or more properly negative results, should be noted. Foremost of these is the low average quality of the botanical papers presented before the Association. Last year the botanists were ten per cent. of the total attendance, and this year eight per cent., or, exclusive of the British, nine per cent., and among them some of the most distinguished names of the science in this country, and yet the botanical communications in no instance exhibit that profound research or comprehensive statement of laws or relationships, or other characteristics that would entitle them to rank with the better papers presented by the zoologists, physicists or chemists. It lies with individual workers to see that this does not remain so. The Botanical Club gives an opportunity for presenting notes and less weighty communications under equally good auspices, and therefore in honor to the science the Biological Section should only be asked to hear what is the most important.

The Club were the recipients of a fine registry book from the local committee of arrangements appointed by the Academy. Nearly 100 names were registered in it, but owing to imperfect methods, due to the newness of the thing, there were conspicuous omissions, and some names entered that ought not to have been. A different system will be devised for the future.

A New Variety of *Comandra umbellata*, Nutt.—Flowering stem erect, six to ten inches high, several growing from the base of a barren stem, along its upper side; barren stems one to two feet long, decumbent, or from an ascending base, sometimes prostrate; leaves of barren stem rather large, one to two inches long, one-third to five-eighth inch wide, elliptical or lance-ellipti-

cal, somewhat deciduous. May be called *C. umbellata* Nutt. var. *decumbens*, from the habit of its stem. Dry, wooded hills, Poysippi, Wanshara Co., Wis., July, 1883. Perhaps only local.—E. J. HILL, *Englewood, Ill.*, July 28, 1884.

A Reply.—To the Editor of the *Botanical Gazette*:—Allow me a word in reference to *Specularia* and *Campanula*. My critic, in the notice of my pamphlet in the September number of the *GAZETTE*, after quoting me to the effect that the genuine *Campanulas* have bell-shaped flowers and the *Specularias* have rotate ones, goes on to say that "it would seem that the original Canterbury Bell is no longer a *Campanula*!" I confess my inability to understand this. Wood's *Botanist and Florist* is all I have at hand at present to consult, but he distinctly states that in *Campanula medium*, Canterbury Bells, the flowers are bell-shaped. It would therefore come under *Campanula*, as I have stated it.

Again, in reference to *Specularia*. Wood states that the flowers are "sessile, erect." Gray does not state as to this. But my critic says positively that they are *not* erect. My experience is that they are erect, in opposition, at least, to drooping. Lastly, if there are plenty of species of *Campanulas* with sessile and rotate flowers, there is all the more reason for the union of the two genera into one. On the whole, therefore, I do not see that I am so very far out of the way after all. The word "suggests" would convey a better idea of the manner in which the suggestion was made than the word "announces," which has a disagreeable sound.—JOS. F. JAMES.

Siphoptychium Casparyi, Rostfki.—In August of last year I found on the surface of a decaying log at Lake Placid, Adirondack mountains, an *Æthallium* or Compound plant of the *Myxomycetes*, which presents some interesting features.

Its dimensions were large, being one foot by eighteen inches in diameter in the main portion of the plant, which, with various prolongations additional, gave an area of at least two square feet. Subsequent examination led me to refer the plant to the genus *Siphoptychium*, as far as the genera description, alone given in Dr. Cook's *British Myxomycetes*, would permit. This genus is one of the two new genera created by Rostafinski in the supplement to his *Monograph*, and has not yet been recorded as American. Through the kindness of Prof. Farlow, to whom I referred the plant for identification, I am enabled to append a translation of its specific description, as contained in the *Polish Monograph*. This description so literally applies to my plant that any further detailed account of it is unnecessary.

Siphoptychium Casparyi, Rostfki. On the strongly developed hypothallus stand collected sporangia, having an angular columnar form in consequence of mutual pressure, and slightly convex at the apex. The tubes of the capillitium issuing from the columella are few in number and develop in rows. The hypothallus, the walls of the sporangia, the columella and the mass of the spores are everywhere umber brown. The spores are finely echinulate, size 7.5 mm.—GEO. A. REX, M. D., *Philadelphia*.

Teratology.—I have before me a most curious case of an abnormal daisy, *Chrysanthemum leucanthemum*. In it there are three heads on the same stem, no

flattened and malformed as in most cases of fasciation, but all placed back to back and with perfect individual involucre. Indeed, the heads are in no way changed except in their strange position, which was so remarkable as to attract the attention of my correspondent, Miss Luther, of Providence, who kindly sent the plants for my examination. The three heads combined form a sort of pyramid. If the cluster is turned in a certain position the observer sees but one disk at a time. It is impossible to view all three at once except from above. I think the malformation quite unique.

Cases of fasciation are common, but perhaps worth noting. Mr. Leland, an enthusiastic collector of this city, found a large specimen of *Lobelia cardinalis*, in which apparently two buds had united to produce a uniformly flattened or ribbon-like stem. This bore normal flowers.

Miss Eloise Butler, of Minneapolis, sends me a specimen of *Arisæma triphyllum* with a double spathe including a single spadix; also a much fasciated stalk of *Linaria vulgaris*, having numerous normal flowers on alternated and leafy-bracted pedicels.

Within a day or two I have seen a garden rose in which, in the center of the rosette of petals, was a perfect but unopened flower bud.—W. W. BAILEY, Providence, R. I.

American *Æcidia* on *Ranunculi*.—The great difficulty of properly distributing *æcidia* to their respective teleutosporic forms is well brought out by trying to arrange our species in accordance with foreign investigations. *Uromyces Poæ* and *U. dactylidis* are not known in this country, but a *Puccinia* on *Ranunculus repens* does occur. We have an *æcidium* on *R. abortivus* known as *Æ. Ranunculi*, and one on *Anemone nemorosa*, both of which have been referred to *Æ. Ranunculacearum*, but without much doubt incorrectly. In fact, the true *Æ. Ranunculacearum* is rare in this country, but occurs, as I am informed by Dr. Farlow, near Boston on *R. acris*. After such excellent investigations as those of Mr. Plowright, we are yet quite in the dark regarding the affinities of our own *Ranunculi æcidia*.—J. C. A.

The Potétomètre.—In Nature, xxx, 79, H. Marshall Ward gives a description and figures of an instrument, the "potétomètre," recently devised by Moll, for measuring the amount of water transpired by plants. The instrument is designed to furnish water to the shoot under experiment at a constant pressure. It consists essentially of a burette, stoppered at the top and expanded into a bulb just above the lower stopper. This bulb has two orifices near its middle, one on the right and another on the left side, at the same height. Into one a capillary glass tube is fixed by means of a caoutchouc or cork stopper and into the other a slender glass tube is permanently soldered. The latter tube is bent into the form of a very broad U and expanded at the distal end into a thimble, into which the shoot to be experimented on is fixed by rubber tubing, so that its lower end is exactly on a level with the capillary tube in the bulb. This capillary tube has a movable plate of polished copper placed at right angles, and near to the end which is within the bulb, for the purpose of regulating the size of the bubbles of air which the tube is intended to admit.

The copper plate serves also to direct the bubbles upward into the tubular portion of the burette. As the water is evaporated by the shoot, the exact amount can be read off, by means of the graduations of the burette. The entire apparatus may be supported by an ordinary burette stand.—C. R. B.

EDITORIAL NOTES.

LUDOVICO CALDESI died at Faenza, Italy, in May last.

GEO. BENTHAM died Sept. 10, at the age of 84.

G. B. DELPONTE, late Professor of Botany in the Univ. of Turin, Italy, is dead.

D. APPLETON & Co. have announced a new series of science text books, including botany.

DR. LARS MAGNUS LARSSON, author of several valuable floras, died in July at Karlstad, Sweden.

IT is stated in Müller's *Eucalyptographia* that $1\frac{1}{2}$ parts of Eucalyptus oil in 1000 parts of fluid prevents the development of bacteria.

THE NEW BIOLOGICAL laboratories of the University of Pennsylvania are expected to be ready for occupancy in November.

DR. GRAY, Mr. John Ball and Mr. Wm. Canby took a botanical trip to Roan Mountain after the close of the American Association.

PROF. C. E. BESSEY, of Ames, Iowa, has been tendered the chair of botany in the University of Nebraska, and it is rumored that he will accept.

L. H. BAILEY, JR., is writing a series of "Talks About Weeds" for the *American Cultivator*. The fertility of the Canada thistle is discussed in No. 11.

AN IMPORTANT treatise on fungi by Dr. de Bary has just been issued under the title *Vergleichende Morphologie und Biologie der Pilze, Mycetozen und Bac-terien*.

THE JAPANESE government has made a large and interesting exhibit, both botanically and economically, of the native ligneous flora and its products, at the International Forestry Exhibition now in progress at London.

THE JAPANESE make toothpicks from the wood of the common snowballs, (*Viburnum Opulus*), rope from the stems of the Chinese *Wistaria*, and oil from the seeds of *Camellia Japonica*.

EXPERIMENTS made by A. Adrianowsky of Moscow, given in a late number of the *Botanisches Centralblatt*, showed that diffused daylight had no influence upon the germination of seeds but to retard the process, and the older the seeds the greater the retardation.

A CONSIDERABLE amount of interesting botanical literature annually finds its way into the reports of agricultural and horticultural societies. The following has just come to hand: "A grain of corn," by Prof. C. R. Barnes, in Rep. Ind. Bd. of Agric., 1884. "Two parasitic fungi" and "Functions of the leaf," by Dr. C. E. Bessey, and "Mildew of growing plants," by Prof. J. C. Arthur, in Trans. Iowa Hort. Soc., 1883.